MEMORANDUM

To: Sodium Acifluorfen RED Team Members

From: Christina Scheltema,
Special Review and Reregistration Division

Subject: Sodium Acifluorfen Use Closure Memo

For the purposes of conducting human health and ecological risk assessments, the members of the sodium acifluorfen RED team should use the same assumptions. Historically, the health and ecological exposure assessments have used the maximum label rate to determine potential exposures. However, both typical and maximum label rates may now be considered in the human health and ecological risk assessments.

As a result of the March 11, 1999 SMART meeting and subsequent communications between the RED team members and the registrant, this memorandum will act as the Agency's record of common understanding on the uses of sodium acifluorfen to be used in risk assessments, including all product information; agricultural/ornamental uses; deleted uses; the status of the existing database; and the schedule for completion of draft chapters. The final version of this memo incorporates comments received from HED and EFED. In addition to this memorandum, RED packages consisting of an updated CRMS report, LUIS report, and bibliography have been distributed to the RED team. HED and EFED are using data for their risk assessment from the following sources: (1) information provided by the registrant on usage of various agricultural commodities and ornamentals; (2) labels; and (3) the LUIS report.
The QUA (Quantitative Usage Analysis) prepared for sodium acifluorfen is also considered to be part of this memo. The QUA contains the percent crop treated for the dietary risk assessments.

A draft of this memo was reviewed by BASF. Their comments were included as appropriate.

FORMULATIONS

The following sodium acifluorfen formulations will be included in the Agency's reregistration risk assessment:

Formulation	EPA Registration Number	Lbs ai/gal	Comments
Blazer BASF	7969-79	2.0	Stand Alone Formulation
Blazer 2S BASF	7969-80	2.0	Dormant product* overseas use only
Blazer MUP BASF	7969-87	2.0	Technical
Storm BASF	7969-76	1.33 (+2.67 lbs Bentazon)	Acifluorfen/Bentazon Premix
Galaxy BASF	7969-77	0.67 (+3.0 lbs Bentazon)	Acifluorfen/Bentazon Premix
Conclude Xtra	7969-76	1.33 (+2.67 lbs Bentazon)	Copack product (Storm + Clethodim) Dormant product*
Conclude Ultra BASF	7969-168	0.84 (+1.69 lbs Bentazon)	Copack product (Storm + Sethoxydim)
Manifest BASF	7969-77	0.67 (+3.0 lbs Bentazon)	Copack product (Galaxy + Poast) Dormant product*
KleenUp, Dead-N-Gone Grass and Weed Killer Platte Chemical Co. under transfer to Bonide	34704-774	0.12% (+0.50 % glyphosate)	Ready to Use Acifluorfen/ Glyphosate Formula for Homeowner use
KLEENUP Grass and Weed Killer Monsanto	71995-3 (formerly 239-2509)	0.12% (+0.50% glyphosate)	Ready to Use Acifluorfen/ Glyphosate Formula for Homeowner use
Status American Cyanamid	241-321	2.0	Stand Alone Formulation Dormant product*
Scepter OT American Cyanamid	241-321	2.0 (+0.5 lbs Imazaquin)	Acifluorfen + Imazaquin,

* Use will not be marketed but will be retained on labels. BASF is aware that OPP must include these products in the risk assessment. BASF has made a business decision to support the dormant products.

ESTABLISHED TOLERANCES

Tolerances have been established for sodium acifluorfen on the following commodities:

Cattle, goat, Hog, Horse Kidney, Liver	0.02 ppm
Poultry fat, meat byproducts	0.02 ppm
Poultry Meat, Eggs	0.02 ppm
Milk	0.02 ppm
Soybeans	0.1 ppm
Peanuts	0.1 ppm
Peanut Hulls	0.1 ppm
Rice Grain	0.1 ppm
Rice Straw	0.1 ppm
Strawberries	0.05 ppm

The strawberry tolerance was developed for IR-4. At present, sodium acifluorfen is not registered for use on strawberries under either FIFRA section 3 or section 24(c). IR 4 developed data to support the strawberry tolerance because acifluorfen was a potential methyl bromide replacement. Acifluorfen was proposed for use in renovating strawberry beds in California. Residue chemistry data to support the strawberry tolerance were developed when acifluorfen had higher maximum label rates than at present. Since that time, the technical registrant has lowered the maximum label rate for sodium aciflourfen, and the new maximum rate is lower than the rate supported by IR-4 for strawberries. IR-4 has expressed renewed interest in pursuing a California registration for sodium acifluorfen on strawberries. However, the California registration is not expected to occur until after the RED is finalized. Further, BASF canceled the California registration of acifluorfen and has no plans to reinstate it.

USE AND USE SITES

Sodium acifluorfen is used as a post emergent herbicide to control a variety of weeds. BASF claims there is no residual herbicide activity at the current rates, which range from 0.125 to 0.375 lbs ai/A. Sodium acifluorfen is typically applied with spray adjuvants (crop oil or ionic surfactant) for improved leaf cuticle penetration. Sodium acifluorfen is typically applied when weeds are small (< 4 " tall), when acifluorfen is more effective at low rates. Aciflurofen is used as part of a total weed management program. Use sites and maximum and typical use rates are given in the following table.

Crop/Formulation	Maximum Application Rate, lbs ai/A	Typical Application Rate per Acre per Season, lbs ai/A	Maximum Rate per Acre per Season, lbs ai/A
Peanuts			
Blazer	0.375	0.250	0.500
Storm	0.250	0.250	0.500
Soybeans			
Blazer	0.375	0.188	0.500
Storm	0.250	0.250	0.500
Conclude/Ultra B	0.158	0.158	0.158
Conclude Xtra B	0.250	0.250	0.250
Galaxy	0.250	0.168	0.250
Manifest	0.168	0.168	0.168
Scepter OT	0.250	0.250	0.500
Status	0.375	0.188	0.500
Rice			
Blazer	0.250	0.125	0.250
Storm	0.250	0.250	0.250
Lawns (Monsanto and Platte Chemical/Bonide)			
KleenUp Grass and Weed Killer	Spot treatment	Spot treatment	Spot treatment

RE-ENTRY INTERVAL

The present re-entry interval (REI) for sodium aciflourfen is 48 hours, based on a signal word ("danger").

GROUNDWATER ADVISORY

There is a groundwater advisory statement for sodium aciflourfen on all labels. This is based on the results of prospective groundwater studies for sodium acifluorfen, which showed that acifluorfen may leach to groundwater under some circumstances.

STATUS OF DATABASE

The database for sodium aciflourfen is substantially complete. A few studies are currently in review.

QUANTITATIVE USAGE ANALYSIS

The Biological and Economic Effects Division (BEAD) performed a quantitative usage analysis (QUA) for sodium acifluorfen. This report contains information on percent crop treated to be used in the risk assessment. The original BEAD report is appended.

Quantitative Usage Analysis for Acifluorfen

Case Number: 2605 PC Code: 114402

Date: August 9, 1998 Analyst: Frank Hernandez

Based on available pesticide survey usage information for the years of 1987 through 1998, an annual estimate of acifluorfen total domestic usage averaged approximately one and a half million pounds active ingredient (a.i.) for over six million acres treated. Acifluorfen is a herbicide with its largest markets in terms of total pounds active ingredient allocated to soybeans (93%), peanuts (4%), and rice (2%). Most of the usage is in AR, MS, IL, MO, IN, NC, VA, TX, and AL.

Site	Acres Grown (000)	Acres Treated (000)		% of Crop Treated		LB AI Applied (000)		Average Application Rate			States of Most Usage
		Wtd Avg	Est Max	Wtd Avg	Est Max	Wtd Avg	Est Max	lb ai/ acre/yr	#appl / yr	lb ai/ A/appl	(% of total lb ai used on this site)
Idle Cropland	7,461	255	299	3.42	4.01	0	299	0.0	1.0	0.0	IA 100%
Lots/Farmsteads/etc	24,815	1	498	0.00	2.01	0	132	0.3	1.0	0.3	AR LA MN 100%
Other Crops	2,515	16	132	0.64	5.25	16	132	1.0	2.0	0.5	MN 100%
Peanuts	1,610	180	307	11.19	19.04	56	113	0.3	1.2	0.3	NC GA VA TX AL MS 85%
Rice	2,921	119	183	4.07	6.27	28	48	0.2	1.1	0.2	AR MS MO 90%
Setaside Acres	21,802	4	661	0.02	3.03	1	149	0.2	1.1	0.2	AR SC 100%
Soybeans	62,879	5,771	7,257	9.18	11.54	1,360	1,710	0.2	1.1	0.2	AR MS IL MO MN IN 60%
Woodland	62,825	0	1	0.00	0.00	0	0	0.6	1.0	0.6	SC 100%
Total		6,346	7,842			1,462	2,022				

COLUMN HEADINGS

Wtd Avg = Weighted average--the most recent years and more reliable data are weighted more heavily.
Est Max = Estimated maximum, which is estimated from available data.
Average application rates are calculated from the weighted averages.

NOTES ON TABLE DATA

Usage data primarily covers 1987 - 1996. Calculations of the above numbers may not appear to agree because they are displayed as rounded to the nearest 1000 for acres treated or lb. a.i. (Therefore 0 = < 500) to two decimal percentage points for % of crop treated.

Other/Crop Groups Other Crops include ornamentals, popcorn, rapeseed/canola, and safflower.

SOURCES: EPA data, USDA, and National Center for Food and Agricultural Policy.